Notre Dame High School

220 Jefferson Street

Fairfield, CT 06825

May 2018

Dear Parent(s)/Guardian(s) and Incoming Honors and High Honors Algebra Students,

Mathematics is the gateway to all college and career opportunities. As stated by the National Research Council:

"Students today are growing up in a world permeated by mathematics. The technologies used in homes, schools, and the workplace are all built on mathematical knowledge. Many educational opportunities and good jobs require high levels of mathematical expertise."

In an effort to build a strong foundation for high school math skills and to improve student success in Algebra, all High Honors and Honors Algebra I students and are required to complete the enclosed Summer2018 Math packet. The problems in this packet will review key math skills from previous math courses, and will better prepare students for the new concepts of Algebra I .

Summer Packet Guidelines:

No calculators are to be used to solve problems.

- All work must be done in pencil and shown under each problem.
- Summer packets for High Honors and Honors Algebra I and High Honors Geometry are due Tuesday, September 4, 2018.
- After reviewing packets, the teachers of these classes will know which preliminary skills need to be reviewed with the students.

The teachers of the Mathematics Department are available after school for extra help. I encourage all students to take advantage of working with their own teacher so the teacher can fully assess their knowledge of mathematics.

Calculators are not required in our Algebra I classes however they are used in higher level math classes. If you would like to purchase a calculator for your child I would suggest the TI-84 Plus CE. The best sales for these calculators are usually in August. Normally they are in the vicinity of $135.00 but I have seen them for $85.00 in Target and Staples.

Please feel free to email me with any concerns or questions over the summer. I will be doing day trips during the summer but will get back to you within a few days of your email. You may reach me at: szembrzuski@notredame.org In the subject area indicate that it is an Algebra question.

Sherrie Zembrzuski

Math Department Chairperson

SUMMER MATH PACKET

NOTRE DAME HIGH SCHOOL

ALGEBRA I

HH/H

The examples on the following pages are to be completed and handed into your teacher on Tuesday, September 4, 2018. This will aid the teachers of these classes to give focus to mathematical concepts that will be necessary for this class.

Name_____

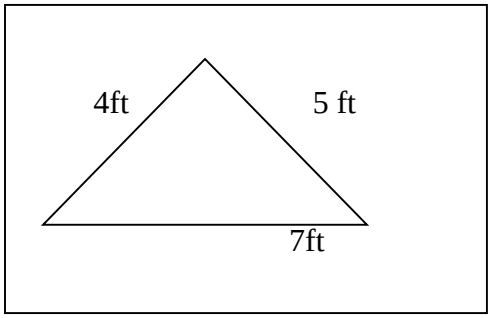
Name _____

FIGURE	PERIMETER	AREA
Square	P = 4s	$A = s^2$
Rectangle	$P = 2l + 2w$	$A = lw$
Scalene triangle	P = a + b + c	A = ½bh
Isosceles triangle	P = 2a + b	A = ½bh
Equilateral triangle	P = 3a	A = ½bh
Circle	$C = 2\pi r$	$A = \pi r^2$

1). Find the perimeter of a rectangle whose length is 8 m and width is 4 m. P = _____

2). What is the area of the above rectangle? A = _____

3). Find the perimeter of the figure below? P = _____



4). Find the circumference of a circle whose radius is 6 meters. C = _____

5). Find the perimeter and area of a square whose side is 10 ft. P = _____ A = _____

6). Find the area of a circle whose diameter is 16 cm. Keep π in your answer. A = _____

Round each number to the given place value:

7). 3849 to the nearest ten. _____

8). 30,567 to the nearest thousand _____

9). 16¾ to the nearest whole number. _____

10). 0.439 to the nearest tenth. _____

Complete the following. Do not use a calculator:

11). 14.2 + 16.9 = _____

12). 15.486 - 6.37 = _____

13). 178 – 1.493 = _____

14). 5.785 + 0.215 = _____

15). (2.3)(1.8) = _____ 16). $\frac{0.1}{0.8}$ = _____

17). 0.67 x 0.43 = _____ 18). 51.98 ÷ 11.3 = _____

A prime number is a number that is divisible by 1 and itself. So if you are asked to give the prime factorization of 48 it would be $2^4 \cdot 3$

Give the prime factorization of the following:

19). 80 _____ 20). 225 _____

The greatest common factor (GCF) of two or more numbers is the greatest(largest) number that is a factor of the numbers involved. For example the GCF of 45 and 81 is 9 even though 1 and 3 are also factors. The GCF should be the largest number that divides into the numbers.

Find the GCF of each of the following"

21). 64 and 20 GCF = _____ 22). 12, 18 and 60 GCF = _____

The least common multiple (LCM) is the least (smallest) whole number that is a multiple of the number. For example the LCM of 8 and 12 is 24. 24 is the smallest number that both 8 and 12 will divide evenly into.

Find the LCM of each of the following:

23). 4 and 20 LCM = _____ 24). 15 and 25 LCM = _____

Equivalent fractions are fractions that represent the same quantities. For example $\frac{3}{6} = \frac{12}{24} = \frac{1}{2}$ are equivalent because they represent the same quantity.

For each of the following, write two equivalent fractions.

25). $\frac{3}{5}$ _____ and _____ 26). $\frac{20}{30}$ _____ and _____

Reduce each of the following to simplest form:

27). $\frac{24}{28}$ = _____ 28). $\frac{63}{72}$ = _____

Write each of the following fractions as decimals:

29). $\frac{5}{8}$ = _____ 30). $\frac{6}{25}$ = _____

Write each of the following decimals as fractions:

31). 0.8 = _____ 32). 0.125 = _____

Write each percent as a decimal.

33). 6.25% = _____ 34). 225% = _____

Write each decimal as a percent

35). 0.86 _____ 36). 1.43 = _____

Complete the following additions, subtractions, multiplications or divisions. Write your answers in lowest form.

37). $\frac{3}{8} + \frac{1}{4}$ = _____ 38). $\frac{11}{12} + \frac{5}{8}$ = _____

39). $\frac{13}{17} - \frac{2}{3}$ = _____ 40). $\frac{8}{9} - \frac{4}{5}$ = _____

41). $\frac{1}{5} \times \frac{3}{5}$ = _____ 42). $\frac{4}{9} \times \frac{3}{16}$ = _____

43). $\frac{8}{9} \div \frac{5}{9}$ = _____ 44). $\frac{9}{10} \div 3$ = _____

EVALUATE EACH OF THE FOLLOWING:

45). $(3x + 1)x$ when $x = 3$ 46) $x \div (2y + 1)$ when $x = 21$ and $y = 1$

WRITE EACH OF THE FOLLOWING AS A MATHEMATICAL EXPRESSION:

47). Nine more than twice n _____

48). Two less than x divided by 3 _____

SIMPLIFY EACH OF THE FOLLOWING:

49). $34 + (-21) =$ _____

50). Evaluate $x + (-9)$ for $x = 35 =$ _____

51). $-5 - (-8) =$ _____

52). $-8 \bullet 9 =$ _____

53). $-48 \div 8 =$ _____

54). Evaluate $k \div (-11)$ for $k = -33 =$ _____

55). $6\frac{2}{7} \div \frac{3}{4} =$ _____

56). $0 \div 5.928 =$ _____

57). $9^3 =$ _____

58). $(-4)^2 =$ _____

59). $(\frac{5}{6})^2 =$ _____

60). $\sqrt{196} =$ _____

61). $8 + 3[3 - (1)^6] =$

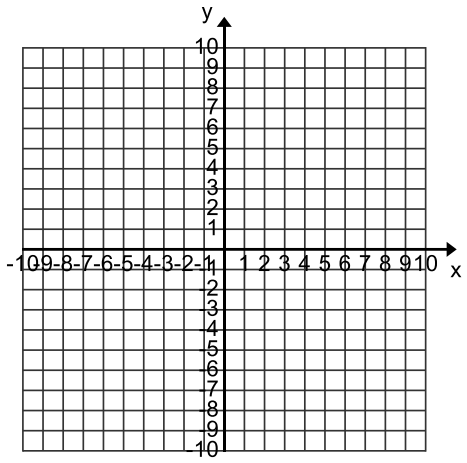
62). $3^4 + 12 \div 3 - (1 - 9) =$

63). Simplify: $\frac{2 + 4^2}{2} + |1 - 6|$

64). SIMPLIFY BY COMBINING LIKE TERMS: $3x^3 + 9z + 2x^3 + 5z + 6x^2$

65). **CREATE A TABLE OF ORDERED PAIRS FOR THE FUNCTION $y = 2x^2 - 2$ USING THE VALUES x = -2, - 1, 0, 1, AND 2. THEN GRAPH THE ORDERED PAIRS ON THE GRAPH THAT HAS BEEN PROVIDED.**

x	$y = 2x^2 - 2$	(x,y)
-2		
-1		
0		
1		
2		



SOLVE EACH OF THE FOLLOWING BY USING A PROPORTION. SHOW ALL WORK:

66). In two hours a student earns $6.30. How much will be earned in 5 hours?

67). Two slices of mushroom pizza cost $2.45, how much will 8 slices cost?

SOLVE THE FOLLOWING PROPORTIONS. SHOW ALL WORK.

68). $\frac{40}{15X} = \frac{10}{12}$

69). $\frac{a+2}{6} = \frac{a}{-3}$

70). $\frac{4a+5}{6} = \frac{2a-3}{-7}$

SOLVE THE FOLLOWING PERCENTAGE PROBLEMS

71). What percent of 125 is 50?

72. What is 25% of 60?

73). Forty-five percent of what number is 50.

SOLVE THE FOLLOWING FOR X. SHOW ALL WORK.

74). $x + 12 = 48$	75). $9x = 90$	76). $7x = 161$
77). $2x + 12 = 48$	78). $9x + 9 = 18$	79). $7x - 10 = 32$